

MURACYPRAEA, NEW SUBGENUS OF CYPRAEA¹

By W. P. WOODRING

U. S. Geological Survey

In the widely used classification of living cowries by F. A. Schilder and M. Schilder (1938-39, p. 174, 1938) and in F. A. Schilder's arrangement of fossil cowries (1932, p. 118), *Cypraea mus* Linné and its fossil allies are assigned to *Siphocypraea*. Indeed, in a recent handsomely illustrated book on the cowries of the world, *C. mus* is cited as the type of *Siphocypraea* (Allan, 1956, p. 29).

Siphocypraea, as a subgenus of *Cypraea*, was proposed by Heilprin (1887, p. 86) for *Cypraea* (*Siphocypraea*) *problematica* Heilprin (1887, pp. 87, 133, pl. 4, figs. 12, 12a, b, pl. 16a, fig. 73), a Pliocene species from Florida. Heilprin adequately described and illustrated the type species, a remarkable cowry. The aperture has an astonishing posterior outlet which forms a deep coma-shaped channel partly encircling the concealed apex of the shell. No other cowry has such a posterior outlet and *Siphocypraea* is a monotypic genus. This exceptional feature of *S. problematica* was discussed by Dall (1890-1903, pt. 1, pp. 167-168, pl. 5, figs. 10, 10b, 1890) and by Olsson and Harbison (1953, p. 262, pl. 27, figs. 2, 2a) in their recent monograph on the Pliocene mollusks of southern Florida. *S. problematica* is not a rare species; there are 90 specimens in the collections of the U. S. National Museum. It is one of the distinctive species that make the rich fauna of the Caloosahatchee marl the most distinctive Pliocene marine fauna in the Americas. These distinctive species are narrowly endemic and left no descendants.

Though some 70 generic and subgeneric names are available for fossil and living cypraeids, none is suitable for *Cypraea mus* and its fossil allies. Therefore the new subgeneric name *Muracypraea* is proposed for this closely knit group of species.

Genus *Cypraea* Linné

Linné, *Systema Naturae*, 10th ed., p. 718, 1758. Type (Montfort, *Conchyliologie Systématique*, vol. 2, p. 631, 1810):

¹ Publication authorized by the Director, U. S. Geological Survey.

Cypraea tigris Linné, Recent, tropical western Pacific Ocean.
(Montfort spelled the generic name *Cyprea*.)

Muracypraea Woodring, n. subgen.

Type: *Cypraea mus* Linné, Recent, south border of Caribbean Sea.

Pyriform cowries of medium size to moderately large (45 to 75 mm.). Posterior part of dorsal surface smooth, roughened, warty, or bituberculate. Outer lip wide, slightly constricted near anterior end; teeth short, moderately strong. Terminal ridge (bordering siphonal canal) narrow. Fossula indistinct, wide, shallow, smooth. Teeth on inner lip weak to strong. Posterior outlet long, wide, deep.

Muracypraea first appeared in strata of early Miocene age in Trinidad, Venezuela, and Peru. It reached its maximum distribution during the middle Miocene: Jamaica, Dominican Republic, Trinidad, Venezuela, Colombia, Panama, Ecuador, and Baja California. The known distribution in late Miocene time included Trinidad, Venezuela, and Panama, dwindling to Venezuela and Ecuador in early Pliocene time. The occurrences so far mentioned represent the lineage of *Cypraea henekeni*² Sowerby (1850, p. 45, pl. 9, fig. 3). None of the members of that lineage is a likely immediate predecessor of *C. mus*, which is unknown before the Pleistocene and now has a limited range along the south border of the Caribbean Sea from Colombia to Venezuela.

REFERENCES CITED

- ALLAN, JOYCE. 1956. Cowry Shells of World Seas, 170 pp., 15 pls., Melbourne.
DALL, W. H. 1890-1903. Trans. Wagner Free Inst. Sci. 3, 6 pts., 1, 654 pp., 60 pls.
HEILPRIN, ANGELO. 1887. Trans. Wagner Free Inst. Sci. 1, pp. 1-134, 19 pls.
OLSSON, A. A. & ANNE HARBISON. 1953. Acad. Nat. Sci. Philadelphia, Mon. 8, 457 pp., 65 pls.

² The original orthography of the trivial name is *henikeri*. Mr. Arthur Greig, Assistant Secretary of the Geological Society of London, informs me that the name of the collector, who later became a Fellow of the Society, was Col. T. S. Heneken. Therefore, *henikeri* was an unintentional error, presumably due to misreading of the collector's handwriting, and alteration to *henekeni* is justified. Both spellings have been used.

- SCHILDER, F. A. 1932. Fossilium Catalogus, I, Animalia, pt. 55; Cypraeacea, 276 pp., Berlin.
- SCHILDER, F. A. & M. SCHILDER. 1938-39. Proc. Malac. Soc. London 23, pp. 119-180, 1 fig., 1938; pp. 181-231, 9 maps, 1939.
- SOWERBY, G. B. 1850. Quart. Jour. Geol. Soc. London 6, pp. 44-53, pls. 9, 10.
-

LIFE HISTORY OF THE SALT-MARSH SNAIL, *MELAMPUS BIDENTATUS* SAY.*

By PAUL A. HOLLE

Asst. Prof., U. of New Hampshire

AND CLARENCE F. DINEEN

Asst. Prof., U. of Notre Dame

Studies concerning the snails of the genus *Melampus* have been limited primarily to shell characteristics. So little has been written, other than shell characteristics, that Morrison (1950) stated regarding the entire family *Ellobiidae*, "the life history of members of this family is still almost completely unknown. Even the simplest observations on populations, rate of growth, or discovery of the eggs of any species will be important in filling this blank." The only major publications on *M. bidentatus* are those of Hausman (1932, 1936). This paucity of information stimulated the work here reported, which is based on experiments with living snails under both laboratory and field conditions.

Materials. Laboratory studies were restricted to snails collected from southern Maine, New Hampshire, and northern Massachusetts. The most successful laboratory substitute for salt-marsh conditions was a shallow glass dish with the bottom covered with an inch of Cellu-cotton (absorbent wadding), overlaid with an ink blotter. This substratum was saturated with salt water.

Field conditions were studied extensively in the same areas, and briefly in Canada along the south shore of the St. Lawrence

* This work is a portion of a dissertation by the senior author in partial fulfillment of the requirements for the degree of doctor of philosophy from the University of Notre Dame.